

554654

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
11 November 2004 (11.11.2004)

PCT

(10) International Publication Number
WO 2004/097886 A2

(51) International Patent Classification⁷: **H01J 29/00**

(21) International Application Number:
PCT/GB2004/001731

(22) International Filing Date: 23 April 2004 (23.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0309371.3 25 April 2003 (25.04.2003) GB

(71) Applicant (for all designated States except US): **CRX LIMITED** [GB/GB]; Unit 5, Riverside Business Centre, Walnut Tree Close, Guildford GU1 4UG (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **MORTON, Edward, James** [GB/GB]; 37 Banders Rise, Guildford,

Surrey GU1 2SL (GB). **LUGGAR, Russell, David** [GB/GB]; 17 Dene Street Gardens, Dorking, Surrey RH4 2DN (GB). **DE ANTONIS, Paul** [GB/GB]; 3 Valve Drive, Horsham, West Sussex RH12 2JU (GB).

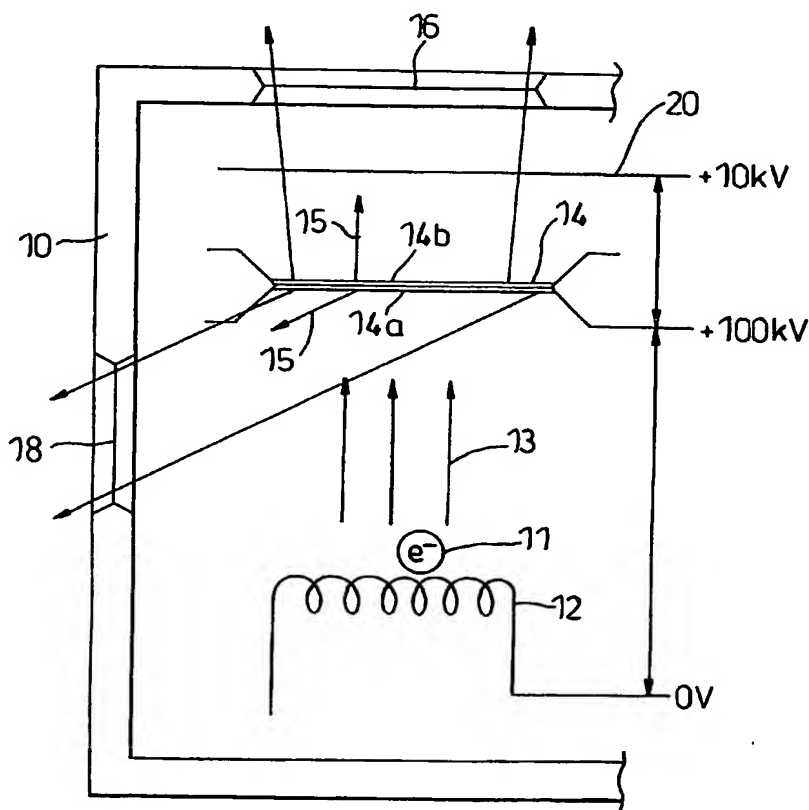
(74) Agent: **BARKER BRETTELL**; 138 Hagley Road, Edgbaston, Birmingham B16 9PW (GB).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH,

[Continued on next page]

(54) Title: X-RAY TUBES



(57) Abstract: An X-ray tube comprises an electron source in the form of a cathode (12), and an anode (14) within a housing (10). The anode (14) is a thin film anode, so that most of the electrons which do not interact with it to produce X-rays pass directly through it. X-rays can be collected through a first window (16) directly behind the anode (14), or a second window (18) to one side of the anode. A retardation electrode 20 is located behind the anode 4 and is held at a potential which is negative with respect to the anode 14, and slightly positive with respect to the cathode (12). This retardation electrode (20) produces an electric field which slows down electrons passing through the anode (14) so that, when they interact with it, they are at relatively low energies. This reduces the heat load on the tube.

WO 2004/097886 A2



GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— *without international search report and to be republished upon receipt of that report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.